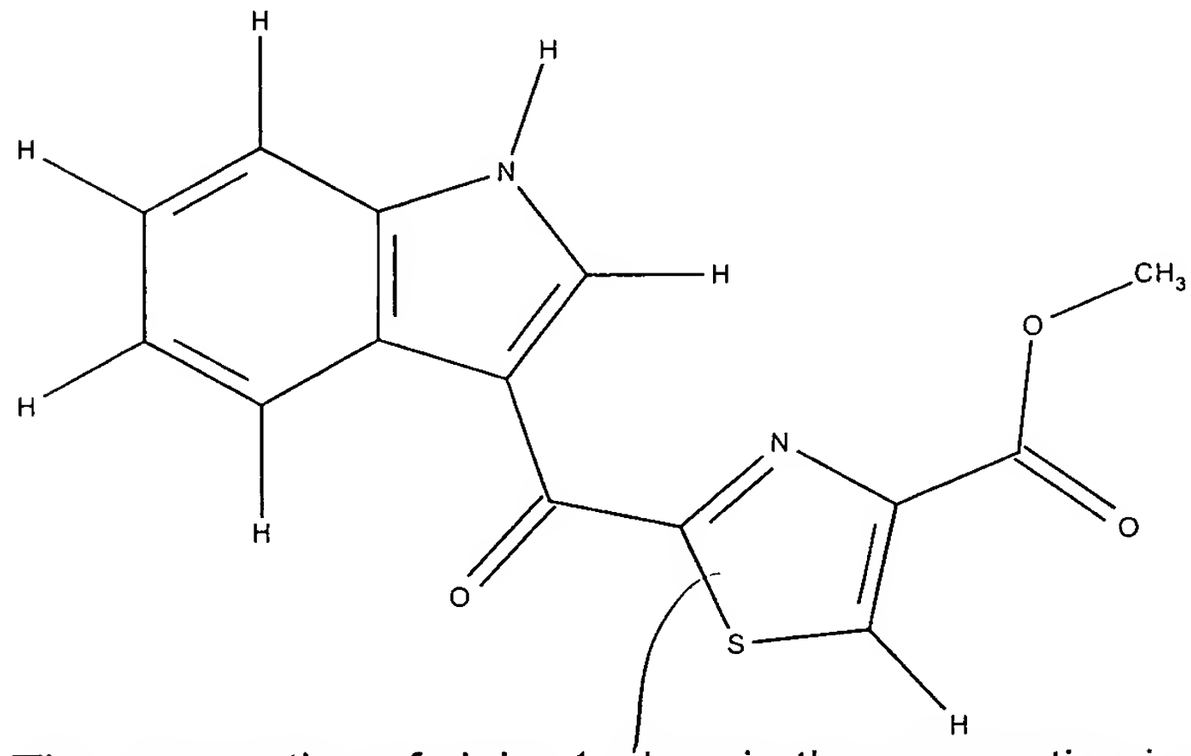
CLAIMS

We claim:

1. A preparation of the endogenous Ah receptor ligand.

2. The preparation of claim 1 wherein the ligand has the following formula:

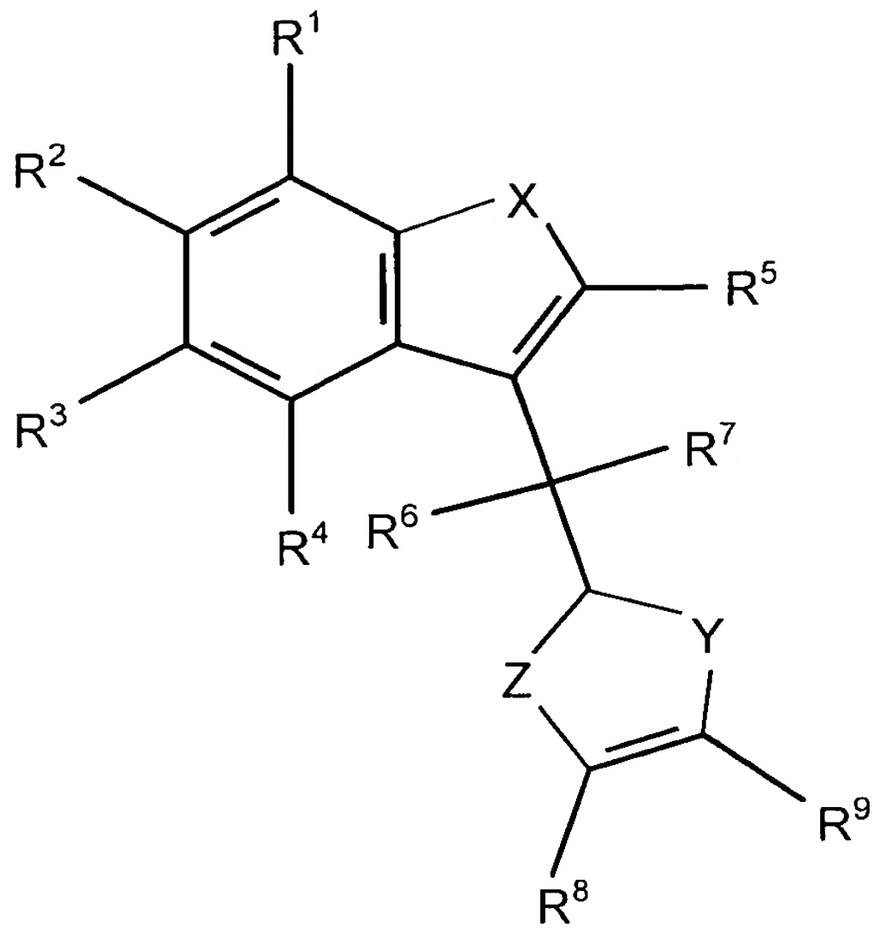



3. The preparation of claim 1 wherein the preparation is at least 90% pure.

4. The preparation of claim 3 wherein the preparation is at least 95% pure.

5. The preparation of claim 1 wherein the ligand is isolated from animal tissues.

6. A preparation of Ah receptor ligand analog, wherein the analog is of the formula:




Wherein

$R^1$, $R^2$, $R^3$, $R^4$, $R^5$, and $R^8$ are selected from the group consisting of H, lower alkyl (1-5 carbons), Br, F, Cl, O-acyl (1-5 C) and $OR^{10}$ where $R^{10}$=H, lower alkyl (1-5 C);

$R^6$ and $R^7$ taken together may be O; or

when $R^6$=H, then $R^7$ can be H, OH, Br, F, Cl, $OR^{11}$ where $R^{11}$=alkyl (1-5 C); or

when $R^7$=H, then $R^6$ can be H, OH, Br, F, Cl, $OR^{11}$ where $R^{11}$=alkyl (1-5 C);

$R^9$ can be $O-\overset{O}{\overset{\|}{C}}-R^{12}$, wherein $R^{12}$ is selected from the group consisting of alkyl (1-5 C), aryl, fluoromethyl, difluoromethyl, and trifluoromethyl; or

$R^9$ can be $-\overset{O}{\overset{\|}{C}}-O-R^{13}$, where $R^{13}$ is selected from the group consisting of alkyl (1-5 C), aryl, fluoromethyl, difluoromethyl, and trifluoromethyl; or

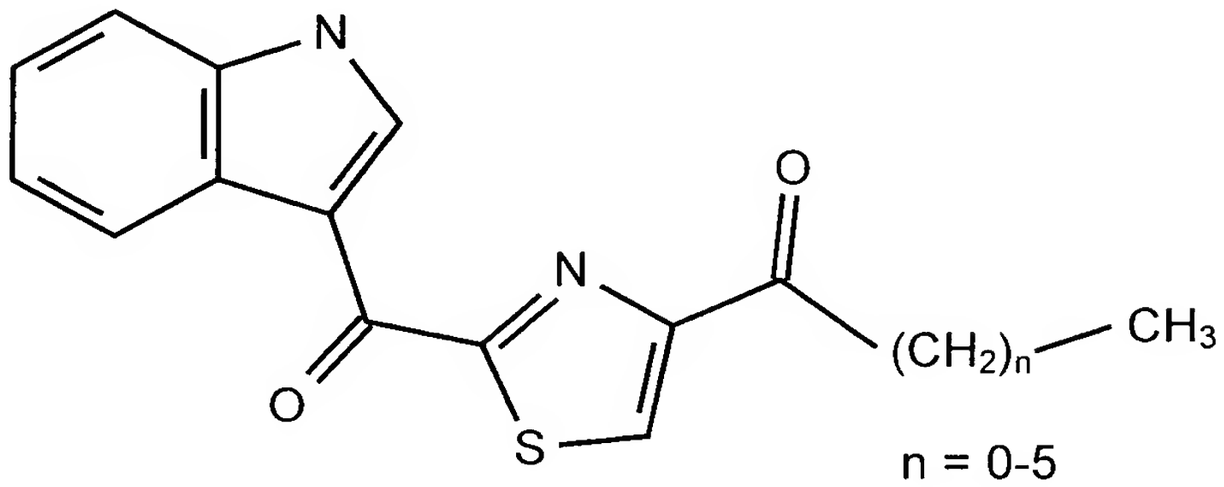
$R^9$ can be $-\overset{\overset{O}{\|}}{C}-R^{14}$, where $R^{14}$=is selected from the group consisting of alkyl (1-5 C), fluoromethyl, difluoromethyl, and trifluoromethyl; or

$R^9$ can be $-\overset{\overset{OH}{|}}{C}-R^{15}$, where $R^{15}$ is selected from the group consisting of alkyl (1-5 C), fluoro methyl, difluoro methyl, and trifluoro methyl, and

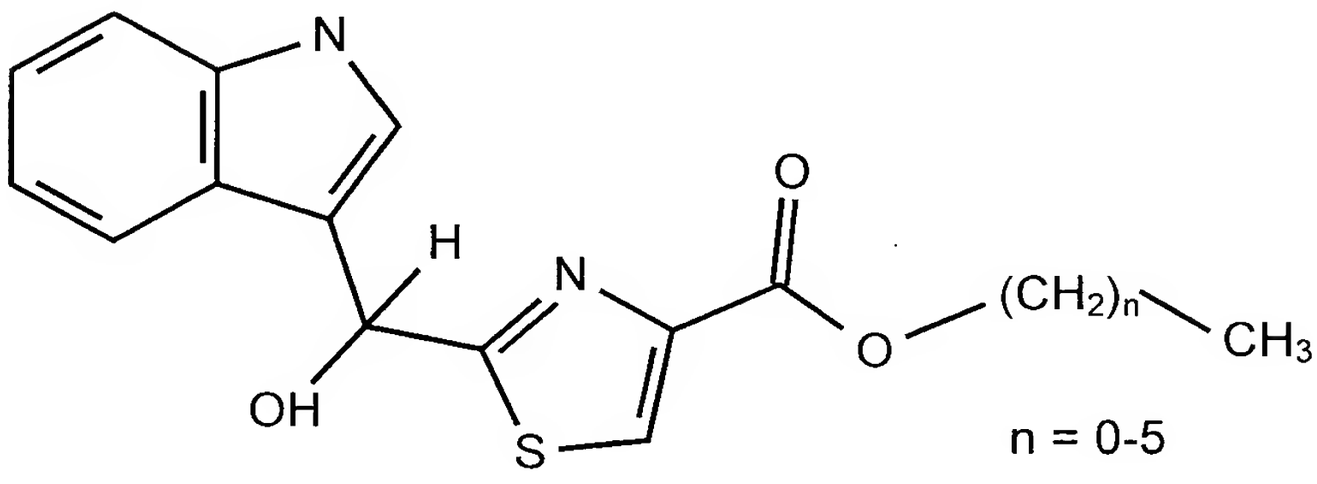
X, Y, Z are selected from the group consisting of C, N, O, and S.

7. A preparation of Ah receptor ligand analog, wherein the analog is selected from the group consisting of I, II and III, wherein:

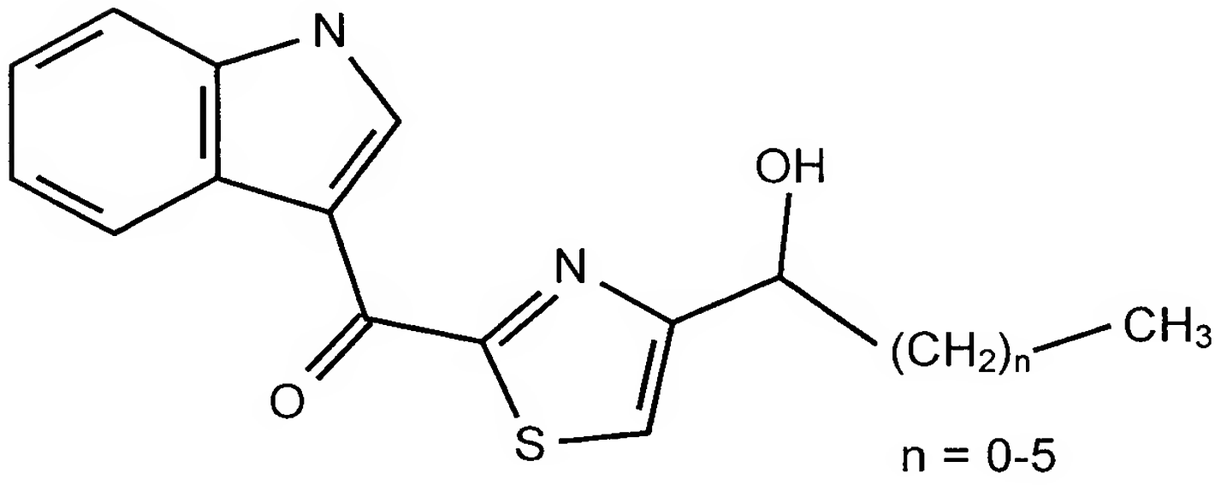
I.




II.




III.



8. A method of preparing endogenous Ah receptor ligand comprising the steps of:

a) obtaining and homogenizing an animal organ, wherein the organ contains the Ah receptor ligand, wherein a homogenate is formed,

b) extracting the homogenate of step (a) with a solvent, wherein an extract is formed,

c) heating the extract, and

d) purifying the ligand through a chloroform gradient.

9. The method of claim 8 wherein the animal organ is selected for the group consisting of lung, liver, brain, bone, and muscle.

10. The method of claim 8 wherein the extraction is with methanol.

11. The method of claim 8 wherein the extract is flushed with nitrogen gas, stirred and centrifuged.

12. The method of claim 8 wherein the extract is heated at between 90°C-110°C with $H_2SO_4$.

13. The method of claim 8 wherein the extract is purified through silica batch purification.

14. The method of claim 8 wherein the ligand is further purified on HPLC columns.

15. The method of claim 8 further comprising the step of determining ligand activity.